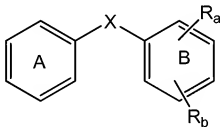


Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A composition which selectively reduces blood flow to a tumor region and forms a reactive oxygen species *in vivo*, wherein said composition comprises an anticancer agent having a quinone, quinone prodrug, catechol or catechol prodrug moiety, provided that said composition is not combretastatin A-1 or a salt, ester or prodrug thereof.
2. (original) The composition of claim 1 wherein said moiety is in the *ortho* position.
3. (original) The composition of claim 1 wherein said anticancer agent is a tubulin binding agent.
4. (previously presented) A compound comprising the structure of formula I:
wherein:

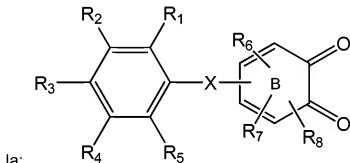


- Ring A is optionally substituted with one to five substituted selected from
 - a) a C₁, C₂, C₃, C₄ or C₅ branched or straight-chain lower alkoxy, cycloalkoxy, heterocycloalkoxy, aryloxy, or lower alkanoyloxy;
 - b) a halogen or thhaloalkyl;
 - c) a C₁, C₂, C₃, C₄ or C₅ branched or straight chain lower alkyl, allyl, allyloxy, vinyl, or vinyloxy;
 - d) an OH, or a C₁, C₂, C₃, C₄ or C₅ primary, secondary, or tertiary alcohol;

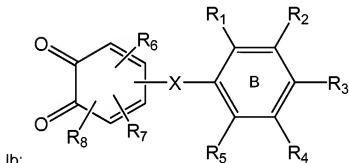
- e) NH_2 or an amino, lower alkylamino, arylamino, aralkylamino, cycloalkylamino, heterocycloamino, aroylamino, aralkanoylamino, amido, lower alkylamino, arylamido, cycloalkylamido, heterocycloamido, aroylamido, or aralkanoylamido; or
 - f) oxo, lower alkanoyl, thio, sulfonyl, sulfonamide, nitro, nitosyl, cyano, carboxy, carbamyl, aryl, or heterocycle;
- Ring B comprises at least one structure denoted by R_a and R_b which represent an *ortho*-quinone moiety $(-\text{C}=\text{O})-(\text{C}=\text{O})-$, *ortho*-catechol $(-\text{C}(\text{OH})-(\text{C}(\text{OH})-$ or *ortho*-catechol pro-drug moiety $(-\text{C}(\text{O}-\text{Prodrug moiety})-(\text{C}(\text{O}-\text{Prodrug moiety})-$); and the remaining carbons of Ring B are optionally substituted with one of five substituents selected from
- g) a C_1 , C_2 , C_3 , C_4 or C_5 branched or straight-chain lower alkoxy, cycloalkoxy, heterocycloalkoxy, aryloxy, or lower alkanoyloxy;
 - h) a halogen or haloalkyl;
 - i) a C_1 , C_2 , C_3 , C_4 or C_5 branched or straight chain lower alkyl, allyl, allyloxy, vinyl, or vinyloxy;
 - j) an OH, or a C_1 , C_2 , C_3 , C_4 or C_5 primary, secondary, or tertiary alcohol;
 - k) NH_2 or an amino, lower alkylamino, arylamino, aralkylamino, cycloalkylamino, heterocycloamino, aroylamino, aralkanoylamino, amido, lower alkylamino, arylamido, cycloalkylamido, heterocycloamido, aroylamido, or aralkanoylamido; or
 - l) oxo, lower alkanoyl, thio, sulfonyl, sulfonamide, nitro, nitosyl, cyano, carboxy, carbamyl, aryl, or heterocycle; and
- Bridge X is selected from the group consisting of alkenes $(-\text{CR}_9=\text{CR}_{10}-)$, alkanes $(\text{CR}_9-\text{CR}_{11}\text{R}_{12})$, alkynes, amides $(-\text{NR}_9-\text{CO}-)$, amines $(-\text{NH}-, -\text{NR}_8-, \text{ or } -\text{CR}_9-\text{N}-)$, carbonyl $(-\text{CO}-)$, ethers $(-\text{C}(\text{R}_8)-\text{O}-)$, sulfonamides $(-\text{NR}_8-\text{SO}_2-)$, sulfonates $(-\text{O}-\text{SO}_2-)$, aryls, oxo $(-\text{O}- \text{ or } -\text{O}(\text{R}_8)-)$, thio $(-\text{S}-)$ cycloalkyls, propanones $(-\text{C}(\text{O})-\text{CR}_8=\text{CR}_9-)$; wherein R_8 , R_9 , R_{10} , or R_{11} are alternatively H, alkyl, amino, amido, cyano, hydroxyl, or carboxyl;

provided that said compound is not combretastatin A1 or a salt, ester, or prodrug thereof.

5. (previously presented) A compound comprising a quinone, quinone prodrug, or a pharmaceutically acceptable salt form thereof having one of the following general structures:



or



wherein:

- a. at least one of R₁, R₂, R₃, R₄, R₅, R₆, R₇ or R₈ are the same or different and are selected from
 - i) a C₁, C₂, C₃, C₄ or C₅ branched or straight-chain lower alkoxy, cycloalkoxy, heterocycloalkoxy, aryloxy, or lower alkanoyloxy;
 - ii) a halogen or trhaloalkyl;
 - iii) a C₁, C₂, C₃, C₄ or C₅ branched or straight chain lower alkyl, allyl, allyloxy, vinyl, or vinyloxy;
 - iv) an OH, or a C₁, C₂, C₃, C₄ or C₅ primary, secondary, or tertiary alcohol;

- v) NH_2 or an amino, lower alkylamino, arylamino, aralkylamino, cycloalkylamino, heterocycloamino, aroylamino, aralkanoylamino, amido, lower alkylamino, arylamido, cycloalkylamido, heterocycloamido, aroylamido, or aralkanoylamido; or
- vi) oxo, lower alkanoyl, thio, sulfonyl, sulfonamide, nitro, nitrosyl, cyano, carboxy, carbamyl, aryl, or heterocycle;

and the remaining R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , or R_8 are H; and

- b. X is selected from the group consisting of alkenes ($-\text{CR}_9=\text{CR}_{10}-$), alkanes ($\text{CR}_9-\text{CR}_{11}\text{R}_{12}$), alkynes, amides ($-\text{NR}_9-\text{CO}=$), amines ($-\text{NH}-$, $-\text{NR}_8-$, or $-\text{CR}_9-\text{N}-$), carbonyl ($-\text{CO}-$), ethers ($-\text{C R}_8-\text{O}-$), sulfonamides ($-\text{NR}_8-\text{SO}_2-$), sulfonates ($-\text{O}-\text{SO}_2-$), aryls, oxo ($-\text{O}-$ or $-\text{O R}_8-$), thio ($-\text{S}-$) cycloalkyls, propanones ($-(\text{C}=\text{O})-\text{CR}_8=\text{CR}_9-$); wherein R_8 , R_9 , R_{10} , or R_{11} are alternatively H, alkyl, amino, amido, cyano, hydroxyl, or carboxyl.

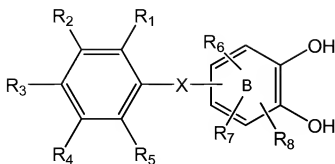
6. (original) The compound of claim 5, wherein X forms a covalent linkage between Ring Z and B comprising two contiguous atoms of the same or different element.

7. (original) The compound of claim 6, wherein the covalent linkage is an ethylene group ($-\text{CH}=\text{CH}-$) and Rings A and B are in a cis (Z) isomeric configuration.

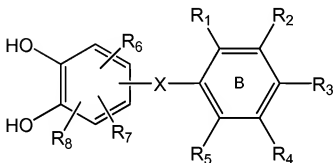
8. (original) The compound of claim 7, wherein R_2 , R_3 , and R_4 are methoxy.

9. (original) The compound of claim 5, wherein said quinone is a bioreductive agent which is reductively activated *in vivo* to form a catechol capable of participating in a redox cycling reaction to form one or more Reactive Oxygen Species ("ROS").

10. (previously presented) A compound comprising a quinone, quinone prodrug, or a pharmaceutically acceptable salt form thereof having one of the following general structures:



IIa:
or



IIb:

wherein:

- a. at least one of R₁, R₂, R₃, R₄, R₅, R₆, R₇ or R₈ are the same or different and are selected from:
 - i) a C₁, C₂, C₃, C₄ or C₅ branched or straight-chain lower alkoxy, cycloalkoxy, heterocycloalkoxy, aryloxy, or lower alkanoyloxy;
 - ii) a halogen or trhaloalkyl;
 - iii) a C₁, C₂, C₃, C₄ or C₅ branched or straight chain lower alkyl, allyl, allyloxy, vinyl, or vinyloxy;
 - iv) an OH, or a C₁, C₂, C₃, C₄ or C₅ primary, secondary, or tertiary alcohol;
 - v) NH₂ or an amino, lower alkylamino, arylamino, aralkylamino, cycloalkylamino, heterocycloamino, aroylamino, aralkanoylamino, amido, lower alkylamino, arylamido, cycloalkylamido, heterocycloamido, aroylamido, or aralkanoylamido; or
 - vi) oxo, lower alkanoyl, thio, sulfonyl, sulfonamide, nitro, nitrosyl, cyano, carboxy, carbamyl, aryl, or heterocycle;

and the remaining R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , or R_8 are H; and

- b. X is selected from the group consisting of alkenes ($-\text{CR}_9=\text{CR}_{10}-$), alkanes ($\text{CR}_9-\text{CR}_{11}\text{R}_{12}$), alkynes, amides ($-\text{NR}_9-\text{CO}-$), amines ($-\text{NH}-$, $-\text{NR}_9-$, or $-\text{CR}_9-\text{N}-$), carbonyl ($-\text{CO}-$), ethers ($-\text{C R}_8-\text{O}-$), sulfonamides ($-\text{NR}_8-\text{SO}_2-$), sulfonates ($-\text{O}-\text{SO}_2-$), aryls, oxo ($-\text{O}-$ or $-\text{O R}_8-$), thio ($-\text{S}-$) cycloalkyls, propanones ($-(\text{C}=\text{O})-\text{CR}_8=\text{CR}_9-$); wherein R_8 , R_9 , R_{10} , or R_{11} are alternatively H, alkyl, amino, amido, cyano, hydroxyl, or carboxyl

provided that said compound is not combretastatin A1 or a salt, ester, or prodrug thereof.

11. (original) The compound of claim 10, wherein X forms a covalent linkage between Ring A and B, comprising two contiguous atoms of the same or different element.

12. (original) The compound of claim 11, wherein the covalent linkage is an ethylene group ($-\text{CH}=\text{CH}-$), and Rings A and B are in a cis (Z) isomeric configuration.

13. (original) The compound of claim 12, wherein R_2 , R_3 and R_4 are methoxy.

14. (original) The compound of claim 13, wherein R_8 is selected from:

- i) a C_1 , C_2 , C_3 , C_4 or C_5 branched or straight-chain lower alkoxy, cycloalkoxy, heterocycloalkoxy, aryloxy, or lower alkanoyloxy;
- ii) a halogen or thaloalkyl;
- iii) a C_1 , C_2 , C_3 , C_4 or C_5 branched or straight chain lower alkyl, allyl, allyloxy, vinyl, or vinyloxy;
- iv) an OH, or a C_1 , C_2 , C_3 , C_4 or C_5 primary, secondary, or tertiary alcohol;
- v) NH_2 or an amino, lower alkylamino, arylamino, aralkylamino, cycloalkylamino, heterocycloamino, aroylamino, aralkanoylamino, amido, lower alkylamino, arylamido, cycloalkylamido, heterocycloamido, aroylamido, or aralkanoylamido;
- vi) oxo, lower alkanoyl, thio, sulfonyl, sulfonamide, nitro, nitrosyl, cyano, carboxy, carbamyl, aryl, or heterocycle;

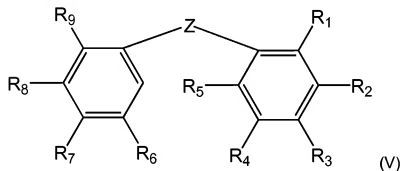
and the remaining R_1 , R_5 , R_6 , and R_7 are H.

15. (original) The compound of claim 14, wherein R_8 is OH or $-O-CH_2-CH=CH_2$.

16. (original) The compound of claim 4, wherein said catechol is a biooxidative agent which is oxidatively activated *in vivo* to form a quinone capable of participating in a redox cycling reaction to form one or more Reactive Oxygen Species ("ROS").

Claims 17-33 CANCELED

34. (original) A composition of the following formula (V):



wherein

- a. Z is an ethylene ($-CH=CH-$) bridge in the cis (Z) isomeric configuration;
- b. R_1 and R_2 are OH or a prodrug form thereof;
- c. at least one of R_3 , R_4 , R_5 , R_6 , R_7 , R_8 , and R_9 are optionally
 - i) a C_1 , C_2 , C_3 , C_4 or C_5 branched or straight-chain lower alkoxy, cycloalkoxy, heterocycloalkoxy, aryloxy, or lower alkanoyloxy;
 - ii) a halogen or thhaloalkyl;
 - iii) a C_1 , C_2 , C_3 , C_4 or C_5 branched or straight chain lower alkyl, allyl, allyloxy, vinyl, or vinyloxy;
 - iv) an OH, or a C_1 , C_2 , C_3 , C_4 or C_5 primary, secondary, or tertiary alcohol;
 - v) NH_2 or an amino, lower alkylamino, arylamino, aralkylamino, cycloalkylamino, heterocycloamino, aroylamino, aralkanoylamino, amido, lower alkylamino, arylamido, cycloalkylamido, heterocycloamido, aroylamido, or aralkanoylamido;

vi) oxo, lower alkanoyl, thio, sulfonyl, sulfonamide, nitro, nitrosyl, cyano, carboxy, carbamyl, aryl, or heterocycle; and
the remaining R₃, R₄, R₅, R₆, R₇, R₈ and R₉ are hydrogen.

35. (original) The composition of claim 34, wherein at least three of R₆, R₇, R₈, and R₉ are not hydrogen.

36. (original) The composition of claim 35, wherein R₆, R₇ and R₈ are the same.

37. (original) The composition of claim 36, wherein R₆, R₇ and R₈ are methoxy.

38. (original) The composition of claim 37, wherein R₃ is

- i) a C₁, C₂, C₃, C₄ or C₅ branched or straight-chain lower alkoxy, cycloalkoxy, heterocycloalkoxy, aryloxy, or lower alkanoyloxy;
- ii) a halogen or trhaloalkyl;
- iii) a C₁, C₂, C₃, C₄ or C₅ branched or straight chain lower alkyl, allyl, allyloxy, vinyl, or vinyloxy;
- iv) an OH, or a C₁, C₂, C₃, C₄ or C₅ primary, secondary, or tertiary alcohol;
- v) NH₂ or an amino, lower alkylamino, arylamino, aralkylamino, cycloalkylamino, heterocycloamino, aroylamino, aralkanoylamino, amido, lower alkylamino, arylamido, cycloalkylamido, heterocycloamido, aroylamido, or aralkanoylamido;
- vi) oxo, lower alkanoyl, thio, sulfonyl, sulfonamide, nitro, nitrosyl, cyano, carboxy, carbamyl, aryl, or heterocycle; and

R₄, R₅, and R₉ are hydrogen.

39. (previously presented) The composition of claim 38, wherein R₃ is -CH₃, -CH₂CH₃, -OCH₂CH₃, -F, -Br, -CF₃, -CBr₃, -OH, -O-CH₂-CH=CH₂, -CH₂-CH=CH₂, -NH₂, -NO₂, -cyano, -carboxy, or -benzyl.

40. (original) The composition of claim 39, wherein R₆, R₇, and R₈ are F.

41. (original) The composition of claim 40, wherein R₃ is

- i) a C₁, C₂, C₃, C₄ or C₅ branched or straight-chain lower alkoxy, cycloalkoxy, heterocycloalkoxy, aryloxy, or lower alkanoyloxy;
- ii) a halogen or thhaloalkyl;
- iii) a C₁, C₂, C₃, C₄ or C₅ branched or straight chain lower alkyl, allyl, allyloxy, vinyl, or vinyloxy;
- iv) an OH, or a C₁, C₂, C₃, C₄ or C₅ primary, secondary, or tertiary alcohol;
- v) NH₂ or an amino, lower alkylamino, arylamino, aralkylamino, cycloalkylamino, heterocycloamino, aroylamino, aralkanoylamino, amido, lower alkylamino, arylamido, cycloalkylamido, heterocycloamido, aroylamido, or aralkanoylamido;
- vi) oxo, lower alkanoyl, thio, sulfonyl, sulfonamide, nitro, nitrosyl, cyano, carboxy, carbamyl, aryl, or heterocycle; and

R₄, R₅, and R₉ are hydrogen.

42. (previously presented) The composition of claim 41, wherein R₃ is -CH₃, -CH₂CH₃, -OCH₂CH₃, -F, -Br, -CF₃, -CBr₃, -OH, -O-CH₂-CH=CH₂, -CH₂-CH=CH₂, -NH₂, -NO₂, -cyano, -carboxy, or -benzyl.

Claims 43-56 CANCELED

57. (original) A composition selected from the group consisting of
 6-[(Z)-2-(3,4,5-Trimethoxyphenyl) vinyl]-1,2-dihydroxybenzene,
 3-Ethyl-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-1,2-dihydroxybenzene,
 3-Methyl-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-1,2-dihydroxybenzene,
 4-Bromo-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-1,2-dihydroxybenzene,
 4-Phenyl-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-1,2-dihydroxybenzene,
 3-Allyl-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-1,2-dihydroxybenzene,
 4-Fluoro-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-1,2-dihydroxybenzene,
 2,3,4-Trihydroxy-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-benzene,
 2,3-Dihydroxy-4-ethoxy-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-benzene,
 2,3-Dihydroxy-4-allyloxy-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-benzene,

4-Nitro-6-[(Z)-2-(3,4,5-trimethoxyphenyl)vinyl]-2,3-dihydroxybenzene,
2',3'-dihydroxy -3,5 dichloro-4'-dimethoxy-(Z)-stilbene,
2',3' dihydroxy-4'-methoxy-3,4,5-trifluoro-(Z)-stilbene,
2,3-Dihydroxy-4-methoxy-[(Z)-2-(3,4,5-trimethoxyphenyl) Beta-lactam]-benzene,
2',3' diphosphate-3,4,5-trimethoxy-(Z)-stilbene, tetrasodium salt;
3',4' diphosphate-3,4,5-trimethoxy-(Z)-stilbene, tetrasodium salt;
and combinations thereof.